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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,939	02/15/2001	Michael Zahm	Westphal.6081	2343

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EXAMINER

NATNAEL, PAULO S M

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,939

Applicant(s)

ZAHM ET AL.

Examiner

Paulos M. Natnael

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/30/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-14 and 16 is/are rejected.
- 7) ☒ Claim(s) 9-11 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1, 2, and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lindenmeier et al.**, U.S. Pat. No. **5,313,660**.

Considering claim **1**, Lindenmeier et al. discloses the following claimed subject matter, note;

a) at least two channel selection devices for converting the video/audio high-frequency signals into intermediate frequency signals, is met by the plurality of Tuners 4a-4d, Figs. 1,6,and 7, which receive the high frequency signals HF 7a-7d (fig.7) and convert the same into IF video and audio signals.

b) at least two video demodulation devices to convert said intermediate frequency signals into video signals, is also met by the plurality of tuners, and the disclosure "a plurality of tuners each of the tuners connected to one of the antenna switches and producing one of an intermediate-frequency signal and demodulated signal." (Abstract)

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c) at least two audio demodulation devices to convert said intermediate frequency signals into audio signals, is met by audio demodulators 4b, 4c, and 4d, fig.7;

Except for;

d) an intermediate frequency switching device that selectively connects said at least one of said audio demodulation devices or at least one of said video demodulation devices to a selected one of said channel selection devices in response to a control signal;

Regarding d), Lindenmeier et al disclose antenna switches 2a, 2b, 2c, and 2d wherein the outputs of the antenna distributor as well as the outputs of diversity processors are connected to. The switches 2a-2d are connected to the plurality of tuners. The tuner circuits comprise (as shown in Fig.8) IF converters and demodulators. Lindenmeier et al disclose an antenna distributor, which acts as a switch for distributing the input antenna signals to appropriate antenna switch. Furthermore, a single switch that would perform the task of several switches is notoriously well known in the art of switching, multiplexing or selecting design and would be obvious to those with ordinary skill in the art. Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the mobile reception system of Lindenmeier et al by providing a single switch to replace the switching tasks of the plurality of switches, in order to make the system of Lindenmeier more compact, perhaps even less costly, and thereby more efficient.

Considering claim 2, the receiving device of claim 1, comprising:

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a) at least two receiving antennas that receive and provide said video/audio high-frequency signals, is met by antennae A1-An, Fig. 1.

b) a high-frequency switching device to switch said receiving antennas to said television channel selection devices.

Regarding b, see rejection of claim 1(d).

Considering claim 16,

a) a plurality of antennae that each receive high frequency signals and provide an associated received high frequency signal, is met by antennae A1-An, figs. 1-7.

b) at least two channel selection devices for converting the video/audio high-frequency signals into intermediate frequency signals, is met by the plurality of Tuners 4a-4d, Figs. 1, 6, and 7, which receive the high frequency signals HF 7a-7d (fig. 7) and convert the same into IF video and audio signals.

c) a high frequency switching network that receives each of said associated received high frequency signals and selectively routes said high frequency signal to said at least two channel selection devices, is met by the antennae distributor 1 and the antenna switches 2a-2d, figs. 1-7.

d) at least two video demodulation devices to convert said intermediate frequency signals into video signals, is also met by the plurality of tuners, and the disclosure "a

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plurality of tuners each of the tuners connected to one of the antenna switches and producing one of an intermediate-frequency signal and demodulated signal.” (Abstract)

e) at least two audio demodulation devices to convert said intermediate frequency signals into audio signals, is met by audio demodulators 4b,4c, and 4d, fig.7;

Except for;

f) an intermediate frequency switching device that selectively connects said at least one of said audio demodulation devices or at least one of said video demodulation devices to a selected one of said channel selection devices in response to a control signal;

Regarding f), see rejection of claim 1(d).

3. Claims **3-8 and 13-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindenmeier et al., U.S. Pat. No. 5,313,660 in view of Cvetkovic et al., U.S. Patent No. 6,141,536.

Considering claim **3**, the receiving device of claim 2, comprising a video correlation device that receives said video signals and provides a correlated video output;

Regarding claim 3, Lindenmeier as modified above disclose a diversity processor for evaluating the signal received. Lindernmeier et al, however, do not specifically disclose a correlation device, which device however is well known in the art. In that regard, Cvetkovic et al., disclose a diversity radio system wherein “based on a

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comparison of the two signals, correlator 27 provides an indicating signal to microprocessor 16 to identify whether the audio content is the same. " (see col. 3, lines 30-33)

Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Lindenmeier et al by providing the correlator 27 of Cvetkovic so that the strongest signal or a correlated video/audio would be provided for further processing from the result of comparison of the multiple input signals.

Considering claim 4, the receiving device of claim 3, comprising an audio correlation device that receives said audio signals and provides a correlated audio output.

Regarding claim 4, see rejection of claim 3;

Considering claim 5, the receiving device of claim 4, comprising a label correlation device that receives said video signals and provides a label correlated output signal;

Regarding claim 4, see rejection of claim 3;

Considering claim 6, the receiving device of claim 5, wherein at one of said audio demodulation devices comprises a phase control circuit (28) and at least one filter (21) concurrent with said phase control circuit, for selection and mirror frequency suppression.

Regarding claim 6, the system as modified in claim 3 does not disclose a phase control circuit such as the PLL 28. However, the examiner takes Official Notice in the that it is well known in the art to utilize a phase control circuit such as a PLL for controlling the phase of the signal, and therefore, it would have been obvious to the skilled in the art at the time the invention was made to provide a PLL for the audio modulation device so that the phase of the output signal is the desired phase and not a signal that is out of phase in order to correctly display the video signal.

Considering claim 7, the receiving device of claim 6, wherein said at least one audio demodulation device comprises a field strength detector that provides field strength signal, is met by diversity processor 9b which is structured "to carry out a signal evaluation of the signal received in the diversity processor to control the antenna switch to switch through a more favorable input signal to the tuner connected to it." (see abstract)

Considering claim 8, the receiving device of claim. 7, wherein said at least one audio demodulation device comprises a quality detector that provides a quality signal.

Regarding claim 8, see rejection of claim 7.

Considering claim 12,

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- a) at least two television channel selection devices for converting received high-frequency signals into intermediate frequency signals;
- b) at least two video demodulation devices to convert said intermediate frequency signals into video signals;
- c) at least two audio demodulation devices to convert said intermediate frequency signals into audio signals, wherein each of said audio demodulation devices includes an associated field strength detector and provides a field strength signal indicative thereof;
and,
- d) a first switching device that receives said intermediate frequency signals and routes each of said intermediate frequency signals to an associated one of said video demodulation devices and an associated one of said audio demodulation devices;

Regarding claim 12, see rejection of claims 1 and 7.

Considering claim 13, see rejection of claim 7;

Considering claim 14, see rejection of claim 2.

Response to Arguments

4. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

5. Claims **9-11,15** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to disclose a mobile receiver comprising an evaluation device that receives a correlated audio output signal, a correlated video output signal, a label correlated output signal, and audio signals and provides first switching control signals to a high-frequency switching devices and second switching control signals to a low-frequency switching device, as in claim **9**; wherein said evaluation device controls said high-frequency switching device and said low-frequency switching device in accordance with a selectable operating mode selected by a mode command signal is met by controller's control signal to I/O switch and to the tuners, as in claim **10**; an evaluation device that receives said correlated audio output signal, said correlated video output signal, said label correlated output signal, said field strength signal, said quality signal, said audio signals and provides first switching control signals to said high-frequency switching devices and second switching control signals to said low-frequency switching device, as in claim **11**; a correlator that receives and correlates the video signal and provides a correlation signal indicative thereof, and an evaluation devices that receives the field strength signal and provides a first control signal to control switching of the first

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switching device, and a second control signal to control switching of the second switching device, as in claim 15;

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PAULOS M. NATNAEL
PATENT EXAMINER

PMN
January 29, 2005